CrossTalk

Edition 95 - June 2002

PROACT

A Base-level Pollution Prevention Resource sponsored by HQ Air Force Center for Environmental Excellence

P2 Initiatives

Partnering

Many Air Force installations are engaging in partnerships with regulatory agencies, communities, and other groups to increase the effectiveness of their environmental programs. Recently, Davis-Monthan AFB and Luke AFB, along with installations from other branches of the military have entered an Arizona Pollution Prevention Partnership with the Arizona Department of Environmental Quality (ADEQ). The partnership is not intended to provide regulatory guidance; instead, the Arizona Pollution Prevention Partnership creates a forum for the military and regulatory agencies to crossfeed information and develop solutions to environmental problems. The ADEQ plans to share pollution prevention success stories from the military with private industry. If your base has a successful partnering relationship that has resulted in a better environmental program, contact PROACT at DSN 240-4214 to share your success.

Luke AFB Delisted

Luke AFB has been removed from the Federal Superfund list, making it the first active installation to be removed from the list. Representatives from the United States Environmental Protection Agency (EPA) and the Arizona Department of Environmental Quality joined Luke AFB personnel in a ceremony held 29 April 2002 to celebrate the event. The installation was also awarded a "Spirit of Arizona" trophy from the State to recognize the installation's accomplishments.

Superfund is the common term for the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), which was enacted in 1980. The program is administered by the EPA to allow the government to clean up chemical emergencies and abandoned hazardous waste sites. Luke AFB was placed on the Superfund list in August 1990 due to soil and groundwater contamination caused by waste disposal of petroleum products, cleaning solvents, and volatile organic compounds used in industrial operations and aircraft maintenance, most of which occurred during World War II.

What's Inside . . .

Personnel at Luke AFB responded quickly to managing the environmental clean up at the base. One month after Luke AFB was listed as a Superfund site, the installation coordinated with the EPA, the ADEQ and the Arizona Department of Water Resources to develop a strategy to study the extent of contamination on the installation and determine appropriate cleanup measures. Luke AFB has now treated over 625 cubic yards of contaminated soil, removed 66 gallons of jet fuel from soil, and conducted groundwater monitoring to ensure cleanup, completing all necessary remedial actions under the Superfund program in 2001. *(Adapted from Thunderbolt)*

Luke AFB has not only focused on cleaning up past contamination. The base is committed to an overall approach to environmental excellence. Below are some of the base's accomplishments.

- ✓ Best Range Residue Removal efforts in the DoD
- ✓ Qualified Recycling Program earned an annual profit of $250K and over 42M in cost avoidance since 1999
- ✓ Car/Van Trip Reduction Program reduced air pollution by 43 tons, increased van-

pool participants by 700%, eliminated 63 single occupancy trips per day
- ✓ Restoration Advisory Board has been honored by the Environmental Protection Agency for partnerships with regulators
- ✓ Restored a Native American archaeological site
- ✓ Restored base recreational area in cooperation with National Forest Service

Earth Day Update

CrossTalk Edition 91 contained a Technical Inquiry in which a customer requested information on base Earth Day activities. Since its publication, PROACT received updated information from representatives at Travis AFB, California detailing additions to their successful celebration. Their 2002 Earth Day celebration, "A Healthy Habitat for Our Kids," was aimed at educating youth on the importance of habitat protection. Festivities included "Mr. Habitat" leading over 700 kindergarten, first, second, and third grade students in songs explaining the importance of healthy habitats. The base also held the fourth annual recycling contest where prizes were awarded to those who diverted the most from waste streams. The student Earth Day art was exhibited on base and at public locations. Boy and girl scouts assisted adult volunteers in cleaning up trash from five vernal pools, and a tree was planted to celebrate Arbor Day. Travis AFB attributes the success of their celebration to a dedicated group of supporters who continue to plan and expand the scope of their celebration. Earth Day celebrations can provide an opportunity for community involvement and awareness.

PROACT is looking for other great examples of installation and community relationships to highlight in our publications. If your installation hosts events or programs aimed at involving or educating the public about environmental issues, please contact PROACT at DSN 240-4240 or e-mail us at pro-act@brooks.af.mil.

CrossTalk

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Readers may submit articles or photographs for publication. Material will be edited, however, to conform to PROACT and Air Force guidelines.

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ECAMP BMP Update

The Air Force Environmental Compliance Assessment and Management Program (ECAMP) is a tool designed to assist Air Force installations and organizations as they assess their compliance with various federal, state, local, and Air Force environmental requirements. Aside from noting potential program non-compliances, ECAMP reports also identify positive findings or Best Management Practices (BMPs) that demonstrate a standard of excellence or an achievement considered best-in-class. The ECAMP Final Report for Francis. E. Warren AFB contained several positive findings, or BMPs, one of which is highlighted here from the Other protocol.

Recycling Oil Filters

Francis E. Warren Air Force Base, Wyoming

The Transportation Maintenance Shop at Francis E. Warren AFB, Wyoming has eliminated a waste stream by purchasing an oil filter incinerator to burn used filters from government owned vehicles. The Smart Ash Model, manufactured by Elastec Inc., was purchased in conjunction with a Smart Heat energy recovery furnace, which meets Environmental Protection Agency regulations for burning oil filters. The implementation of this technology did not require a permit since the State of Wyoming allows burning of used filters for energy recovery. In addition, the shop is able to turn in the incinerated metal as scrap to the Defense Reutilization and Marketing Service (DRMS) for recycling. Though the initial cost to purchase the incinerator and the Smart Heat recovery furnace was around $5,750, it can be operated for under $10 per week, resulting in an elimination of a waste stream and saving $6,630 per year in disposal costs. For more information, contact PROACT or Mr. Ben Allen, DSN 481-4606.

Corrosion Control

PROACT attended the 2002 Tri-Service Corrosion Conference recently held in San Antonio, TX, which is an open exchange between military services and corrosion technologists. The 2002 conference showcased current Department of Defense (DoD) corrosion control measures and promoted innovative solutions to military corrosion problems. Below are a few of the topics presented at the Tri-Service Corrosion Control Conference, as summarized by our staff:

Green Corrosion Inhibitors

The presentation discussed micro-encapsulation and nano-tubule process technologies. These technologies enable the continued use of currently approved corrosion inhibiting compounds in an environmentally friendly package. This emerging packaging technology reduces human health risks and minimizes the amount of chemicals being used. An example of this technology is the microcapsule packaging of dichromate, nitrate, bromate, and molybdate (DNBM), which reduces leaching and lowers the amount used while effectively inhibiting corrosion and retarding stress fatigue.

Cadmium Replacement for Defense Systems

The presentation discussed cadmium alternatives for use in structural, fastener, and other weapon-critical applications. The primary use of cadmium in the Air Force is as a sacrificial corrosion coating

on high-wear parts, such as aircraft landing gear and jet engine components. To date, ion vapor deposition (IVD) aluminum is being used as an alternative coating in some limited applications, primarily on jet engine turbine blades. Many alternatives are being evaluated, with functional performance testing concluded on non-critical systems. Designated alternatives will undergo further research for specific applications.

Measurement of Volatile Organic Compounds (VOCs) in New-Generation Low-VOC Marine Coatings for the U.S. Navy

This presentation discussed test methods for measuring VOC emissions and indicated governing standards (ASTM D2369 and EPA Test Method 24) are inaccurate in adequately analyzing the VOC content of coatings. This is primarily because of the time elapsed between sample collection and testing, and due to procedures used by different laboratories. The discussion presented results from testing identical samples whose VOC results varied greatly depending on the laboratory procedure utilized.

Pollution Prevention in Aerospace and DoD Painting Operations: Case Studies in Successful Elimination of MEK and Lacquer Thinner

Discussion focused on the generation of hazardous air pollutants during surface preparation prior to painting, and cleanup of equipment using solvents such as methyl ethyl ketone (MEK) and lacquer thinner. Of specific interest is the MEK alternative EP 921, national stock number (NSN) 6850-01-381-4408, which is currently being used at Eglin AFB for cleaning painting equipment. The case study presented showed EP 921 to be more "environmentally responsible." It presents no health hazards, emits no VOCs or hazardous air pollutants (HAPs), does not require TRI reporting or disposal as a hazardous waste, and has reduced overall costs by 66% compared to MEK.

Corrosion Sensing and Monitoring

This presentation updated the corrosion community on results of testing several types of sensors developed to monitor coating integrity as well as environmental corrosivity without having to strip paint or disassemble the equipment being tested. To date, no one sensor is able to both detect corrosion just as it is starting, and detect existing corrosion. Two new technologies for detecting corrosion were presented; however, it is not known at this time whether either will be adopted as effective methods for detection of corrosion under paint, but testing to-date has been encouraging for each.

- A fluorescent indicator for detection of corrosion under coatings is undergoing testing. The indicator must be distributed throughout the coating (in the paint). Corrosion shows as dark spots/areas under fluorescent light, and works with most types of metals. A drop in wavelength and color shift indicates whether the sensor is showing true corrosion from under the coating, or a false reading from a defect in the coating.

- A microwave corrosion detector for inspecting under aircraft paints and appliqués is also undergoing extensive testing. The distance from sensor to the surface being tested is critical, and must be maintained to achieve accurate results. The prototype is hand-held and weighs about 1.5 pounds.

Air Force Program

Also presented, by Major Bullock, Air Force Research Laboratory, Robins AFB, was an overview of the Air Force's corrosion prevention and control program. The overview discussed the Air Force Corrosion Prevention and Control Office's (CPCO) participation in research and development, and how the office is constantly evaluating emerging corrosion prevention technologies and corrosion inhibiting compounds through open forums at the Tri-Service Corrosion Conference and the Air Force Corrosion Program Conference. Attendees were also informed that the CPCO recently took possession of four technical orders (T.O.s) governing Air Force vehicles, all of which are being revised and updated by the CPCO. In addition, the office manages several general T.O.s, including:

- 1-1-8 (revised 23 April 2001), which incorporated insignias and markings;
- 1-1-689 (Navy Lead), the CPCO is working to provide an Air Force supplement that would include the approved use of products procured to Military Specification MIL-L-8177; and
- 1-1-691 (Navy Lead), the CPCO is working to develop a separate T.O. (same designation) that addresses Air Force specific systems and procedures.

Despite recent technological advances, "environmentally friendly" corrosion inhibiting compounds often do not perform to required Air Force standards. Therefore, many of the T.O.s governing corrosion control practices still call for the use of toxic and/or hazardous chemicals. For more information on the Tri-Service Corrosion Conference contact Major Robert Mantz at robert.mantz@afosr.af.mil or Lieutenant Colonel Paul Trulove at paul.trulove@afosr.af.mil, or visit the Air Force Corrosion Prevention and Control Office at http://www.afcpo.com/.

New Tools and Guidance

EPP Paints

The 1999 Aberdeen Proving Ground Study, Environmentally Preferable Paints (EPP) Minimize Harm, Maximize Savings is now available on Defense Environmental Network and Information Exchange (DENIX). The report provides the results of a study of 565 architectural and anticorrosive latex paints, identifying 71 with the least amount of environmental harm, many that are also cheaper than non-preferable paints. The report is only available to Department of Defense DENIX subscribers at https://www.denix.osd.mil/denix/DOD/Library/Pollution/version.pdf.

HAZMAT Exchange

DENIX is requesting all DoD personnel who work with the Hazardous Material (HAZMAT) Program to use the DENIX web page to exchange information with others around the world. If you have information that would benefit others, submit your information to DENIX. Information sought includes: instructions, guidelines, checklists, templates for a standard operating instruction or memorandum of understanding, facility planning design guide, committee or work group structures, effective work practices, lessons learned, training resources, conferences, and workshops.

AP Training

Affirmative Procurement (AP) training is now available through AFCEE's Web University. This introductory level course is intended for everyone who specifies, buys or uses products that are on the EPA Comprehensive Procurement Guidelines list. Civil engineering and environmental personnel, contracting, operations, maintenance shop material control specialists, and credit card holders are key members of the target audience. Three lessons are included in the course. All students will complete lessons 1 and 2, with lesson 3 offered in three versions that are tailored to specific job functions. To receive credit, students must complete all three lessons and pass a quiz on each lesson. Registration is tracked by Web University and a certificate of completion is provided to the student.

Bases and MAJCOMs may contact Ms. Karen Kivela, DSN 240-4191 or Ms. Tamee Tennison, 240-4670 at AFCEE to request lists of their personnel who have been trained, in order to simplify the reporting that will probably be required once the DoD AP metrics are finalized. This course is currently being tested on-line and the final course will be available in September 2002. Test participants taking the course now can still receive a certificate of completion. To take the new AP course, visit the AFCEE Web University at https://webu.brooks.af.mil/webu/secure/onlinecourse.asp.

Conference Corner

UXO Countermine Forum

The DoD Unexploded Ordnance (UXO) and Countermine Forum: the Preeminent Conference on Technology, Programs, and Partnership will be held 3-6 September 2002 at the Orlando World Center Marriott Resort and Conference Center. The conference will be hosted by the DoD Explosives Safety Board, the United States Army Environmental Center, and the Office of the Project Manager for Mines Countermine. The conference will offer a variety of topics related to UXO. For more information access http://www.theforum2002.com.

P2/HWM Conference

The 7th Annual Joint Services Pollution Prevention & Hazardous Waste Management Conference & Exhibition will be held 19-21 August 2002 in San Antonio, Texas. The conference provides an open forum for exchanging ideas, success stories, case histories and technologies related to pollution prevention and hazardous waste management. As an added benefit this year, attendees will have the opportunity to learn the latest technologies for CADD, GIS, facility management, remote sensing and survey/ mapping at the Geospatial Technologies Symposium. Registration and other information is available at http://www.p2-hwmconference.com/geninfo.cfm.

In Our Customer's Own Words

"Great Service seems to be the rule at PROACT, not the exception."

Senior Master Sergeant Philip Jones
Boise Idaho Air National Guard

Technical Inquiry Roundup

TI 23713 – Biodegradable Dishware Products
By Carl Lehman

A customer contacted PROACT with a request for sources of biodegradable dishware (eating utensils). The customer stated the installation uses a large amount of disposable dishware, and would like to reduce or eliminate this plastic waste stream if possible.

PROACT found the following four companies who offer such products:

1. Biocorp USA, (310) 643-1626, E-mail: info@biocorpUSA.com, offers knives, forks, spoons, teaspoons, and hot & cold cups of various sizes through its "reSource-Ware" brand,

2. Earthshell, (805) 897-2299, E-mail: jnevling@earthshell.com, offers plates, bowls, and sandwich wraps,

3. Signature Works, (800) 647-2468, E-mail: vwhite@netdoor.com, offers a full range of cutlery, and

4. Programmable Life Incorporated, (716) 636-7533, E-mail: info@programmablelife.com, offers cups and cutlery.

TI 23742 – Lead Weight TRI Reporting
By Rick Howell

A PROACT customer requested information about the Emergency Planning and Community Right-to-Know Act (EPCRA) reporting requirements of Section 313. Specifically, the customer wanted to know if the lead weights taken off tires during vehicle balancing operations must be included in the Form R of the Toxic Release Inventory (TRI) Report.

PROACT reviewed the TRI reporting exemptions found in Title 40 Code of Federal Regulations

(CFR) Part 372.38, which states, in part, "if a toxic chemical is present in an article at a covered facility, a person is not required to consider the quantity of the toxic chemical present in such article." However, the article exemption applies only to the quantity of toxic chemical present in the article. If the toxic chemical is manufactured, processed, or otherwise used at the facility other than as part of the article, in excess of established thresholds, then the person is required to report it.

Articles are defined in Title 40 CFR, Part 372, as manufactured items formed to a specific shape or design during manufacture, and has end use functions dependent in whole or in part on its shape or design during end use. An article is an item that does not release a toxic chemical under normal conditions of processing or use. Therefore, toxic chemicals contained in articles are not required to be reported on the Form R. Lastly, we coordinated our response with Ms. Laura Maxwell, point-of-contact for TRI reporting concerns, Environmental Quality Directorate, Headquarters Air Force Center for Environmental Excellence (HQ AFCEE/EQ), DSN 240-4218, who concurred with our findings.

More information regarding EPCRA and reporting requirements are contained in the following:

1. Air Force Installation Toxic Chemical Release Inventory Reporting Guide, Headquarters Air Force Center for Environmental Excellence, May 1997, found on the Headquarters Air Force Center for Environmental Excellence (HQ AFCEE) Environmental Quality Resource Compact Disc (EQ CD), Version 6.0, August 2001, available for PROACT and

2. PROACT EPCRA Fact Sheet Series:
   - EPCRA: An Overview
   - Emergency Planning
   - Emergency Notification
   - Hazardous Chemical Reporting
   - Toxic Chemical Reporting.

TI 23796 – Lead Free Ammunition
By Pilar Castaneda

A customer contacted PROACT for information concerning lead-free bullets. Specifically, the customer wanted to know if lead-free bullets have been approved for use during training for the following calibers:

1. 5.56 millimeter (mm) caliber, used in the M-16 rifle,
2. 9 mm caliber used in the 9 mm Beretta handgun, and
3. 50 mm caliber munitions used in the M-2 machine gun.

PROACT contacted Mr. Dennis Kirsch, Environmental Quality, Headquarters Air Education and Training Command (HQ AETC/CEVQ), Randolph AFB, a member of the Joint Federal Non-Toxic Ammunition Working Group, DSN 487-3240, who stated lead-free ammunition is approved by the Air Force for training purposes only. Mr. Kirsch further stated the following are the only Air Force approved lead-free ammunitions:

1. Reduced Hazard Frangible Ammunition, 5.56 mm caliber, National Stock Number (NSN) 1305-01-463-8232, manufactured by Winchester Ammunition, (618) 258-3511.
2. Reduced Hazard Frangible Ammunition, 9 mm caliber, NSN 1305-01-442-8717, manufactured by Winchester Ammunition.
3. Centerfire Pistol & Revolver Loaded Round (Lead-Free Frangible), 9 mm caliber, NSN 1305-01-442-8717, manufactured by Remington Arms Company.

Mr. Kirsch added there is currently no approved lead-free ammunition available for use in the 50 mm caliber munitions used in the M-2 machine gun, 7.62 mm caliber (for use in the M60 or M240 machine gun), or for the 12-gauge shotgun. However, lead-free ammunition for the 12-gauge shotgun will be available for use by the end of 2002.

Alternative Cleaner Materials Compatibility Evaluation Program

The U.S. Army Aberdeen Test Center (ATC), and several program partners throughout the defense agencies have joined to establish the Alternative Cleaner Materials Compatibility Evaluation Program. The program supports initiatives called forth in the 1990 Pollution Prevention Act and Executive Order 12856, which mandate federal agencies to implement measures to address waste reduction and pollution prevention at the source. The Alternative Cleaner Materials Compatibility Evaluation Program is designed to promote and facilitate evaluation, approval, and routine use of environmentally acceptable alternative solvent cleaners. The project's purpose is to eliminate or minimize hazardous, toxic, and flammable solvents used for general maintenance, cleaning, and repair operations by identifying alternate substances whose use are technically and physically proven not to adversely affect military readiness, soldiers, or materiel. For more information on this program, contact Mr. Dennis Teefy, U.S. Army Aberdeen Test Center, 410-436-6866.

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